

Second Generation Low Cost Cryocooler Electronics (LCCE-2), Phase I

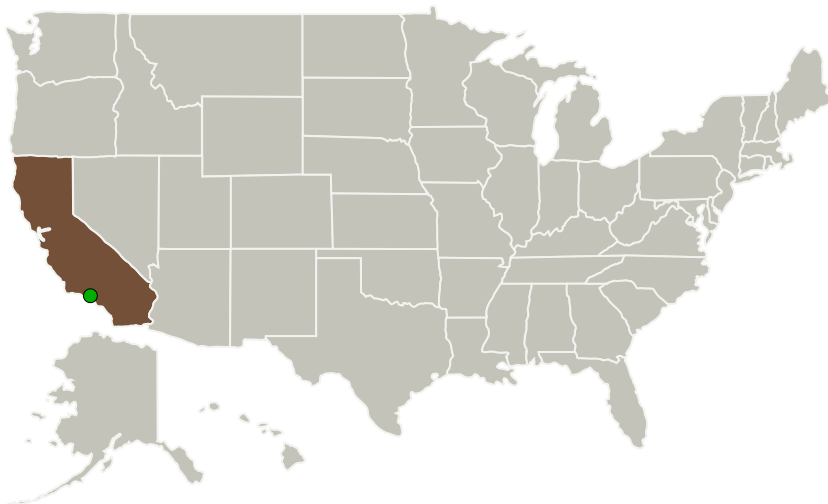


Completed Technology Project (2013 - 2013)

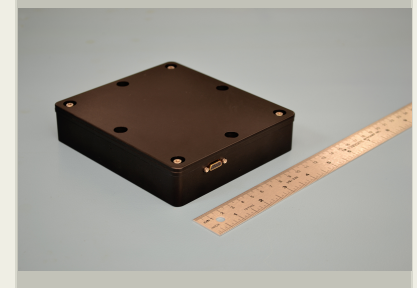
Project Introduction

The LCCE-2 Program builds off the successes of the USAF "Low Cost Cryocooler Electronics for Space Missions" Program, extending the performance of the developed LCCE to include active vibration cancellation and advanced input power bus circuitry. The former is important for imaging payloads because the exported vibration from the cryocooler can be a major contributor to the overall image jitter. The latter will provide the ability to safely operate the cryocooler system off of virtually any spacecraft power bus from all perspectives, meaning that the cryocooler system will be protected from transient effects from a "dirty bus," and the cryocooler will not impart back onto the power bus large amplitude current ripple that would otherwise affect the performance of other devices on the bus.

Primary U.S. Work Locations and Key Partners



| Organizations Performing Work | Role | Type | Location |
|----------------------------------|-------------------------|-------------|----------------------|
| Iris Technology Corporation | Lead Organization | Industry | Irvine, California |
| ● Jet Propulsion Laboratory(JPL) | Supporting Organization | NASA Center | Pasadena, California |



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Completed Technology Project (2013 - 2013)

Primary U.S. Work Locations

California

Project Transitions



May 2013: Project Start

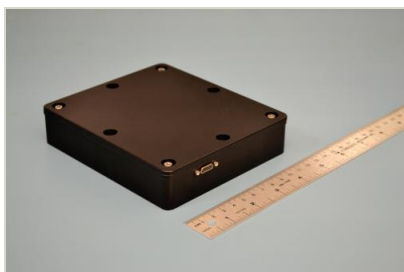


November 2013: Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/140435>)

Images



Project Image

Second Generation Low Cost Cryocooler Electronics (LCCE-2)
(<https://techport.nasa.gov/image/129091>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Iris Technology Corporation

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Carl Kirkconnell

Co-Investigator:

Carl Kirkconnell

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Technology Maturity (TRL)

Start: **3**
Current: **4**
Estimated End: **4**



Technology Areas

Primary:

- TX14 Thermal Management Systems
 - └ TX14.1 Cryogenic Systems
 - └ TX14.1.3 Thermal Conditioning for Sensors, Instruments, and High Efficiency Electric Motors

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System